**PATENT** 

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Signature

**Applicant** 

Keiko Matsubara, et al.

Application No.

09/672,287

Filed Title September 28 2000

NEGATIVE ACTIVE MATERIAL FOR RECHARGEABLE

LITHUM BATTERY ELECTRODE FOR RECHARGEABLE

EFFIUM BATTERY RECHARGEABLE LITHIUM

BATTERY AND METHOD OF PREPARING NEGATIVE

ACTIVE MATERIAL FOR RECHARGEABLE LITHIUM

SECONDARY BATTERY

Grp./Div.

1745

Examiner

Dah Wei D. Yuan

Docket No.

40589/DBP/Y35

## **RULE 132 DECLARATION**

Post Office Box 7068 Pasadena, CA 91109-7068

Assistant Commissioner for Patents Washington, D.C. 20231 May 8, 2002

## Commissioner:

- I, Kyou-Yoon Sheem, hereby declare that:
- 1. I received a bachelor's degree in chemical engineering from Chung-nam National

Techwin Co., Ltd. from 1993 to 1995. I have been employed by Samsung SDI Co., Ltd. and a Research Fellow at the research and development center since 1995.

- 2. My responsibilities have included active involvement in the development, study, and use of negative active material of rechargeable lithium batteries, binder material, structural design of negative electrodes, etc. I have been involved in many patent applications of Samsung SDI Co., Ltd. in relation to negative active materials, especially carbonaceous material doped or coated with other substances to enhance battery performance. I consider myself an expert in the field of negative active materials of rechargeable lithium batteries.
- 3. I have reviewed U.S. Application No. 09/672,287. I understand that the application claims, inter alia, a negative active material for a rechargeable lithium battery comprising a particle-agglomerated product comprising a carbonaceous material and an amorphous metal compound, the carbonaceous material being a material into or from which lithium is intercalated or deintercalated, and the amorphous metal compound being able to make an alloy with lithium and including one or more metals selected from the group consisting of Sn, Ag, Fe, Pd, Pb, Al, Si, In, Ni, Co, An and Cd.
- 4. The particle-agglomerated product produced as described in U.S. Patent Application No. 09/672,287 is a composite produce in which an amorphous metal compound and carbonaceous material are integrated through coating and agglomerating processes using an agglomerating device and calcination process. The resulting particle-agglomerated product is in the form of a powder.
- 5. I have reviewed U.S. Patent No. 6,004,695 to Goda et al. Goda describes a method whereby an amorphous tin-based composite oxide (a negative active material), a flake binder (a conductive agent), a polyvinylidene fluoride dispersion (a binder), carboxymethyl cellulose (a binder), and lithium acetate (an additive) are kneaded in water to prepare a slurry.

The slurry is coated onto copper foil and dried, and then the coated copper foil is compressed to prepare a negative electrode. This process does not produce a negative active material in particle-agglomerated form, but instead produces a slurry.

- 6. In my opinion, as an expert in the field of negative active materials of rechargeable lithium batteries, the Goda patent does not describe a negative active material in particle-agglomerated form, as claimed in U.S. Patent Application No. 09/672,287.
- 7. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge; that willful false statements and the like so made are punishable by fine of imprisonment, or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date _	May 8, 2002	By K.Y. Sheem	
		Kyou-Yoon Sheem	

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